IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Kousei Sano et al.	: Art Unit:
Serial No.:	To Be Assigned	: Examiner:
Filed:	Herewith	:
FOR: OPTICAL SYSTEM, POSITION DETECTING APPARATUS, MAGNETIC RECORDING APPARATUS, AND LENS WITH APERTURE		:

DIVISION OF:

Applicant:	Kousei Sano et al.	: Art Unit:	2651
Serial No.:	09/045,149	: Examiner:	N. Hindi
Filed:	March 19, 1998	:	
FOR: OPTICAL SYSTEM, POSITION DETECTING APPARATUS, MAGNETIC RECORDING APPARATUS, AND LENS WITH APERTURE		:	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

S I R :

Prior to examination, please amend the above-identified application as follows:

IN THE DRAWINGS:

Subject to approval by the Examiner in charge of the above-identified application please enter the correction to Figure 5 as shown on the accompanying red-inked sketch.

SPECIFICATION:

Specification at page 14, line 6:

The entire disclosure of U.S. Patent Application 09/045,149, filed March 19, 1998 is expressly incorporated by reference herein.

CLAIMS:

Please cancel claims 1-8, 22-23, and 25.

Please amend the claims as follows:

12. (Amended) The aperture-provided lens according to claim 9, wherein

a second diffraction device is set in a region other than said first opening and said second opening, and

the percentage of the luminous energy penetrating without being diffracted by said second diffraction device is 5% or less.

13. (Amended) The aperture-provided lens according to claim 9, wherein concaves and convexes are formed on the surface of a region other than said first opening and said second opening.

14. (Amended) The aperture-provided lens according to claim 9, wherein

when assuming the diffraction device provided for said opening as a first diffraction device and the diffraction device provided for said second opening as a third diffraction device,

the grating interval of said third diffraction device is smaller than the grating interval of said first diffraction device.

15. (Amended) The aperture-provided lens according to claim 9, wherein

said aperture-provided lens is provided with a region A and a region B; and

a light beam passing through said region A is condensed at a point different from a point where a light beam passing through said region B is consensed.

17. (Amended) The aperture-provided lens according to claim 9, wherein

said diffraction devices having grating intervals differing in regions and the grating interval of the diffraction device in a region far from the center of a lens is larger than that of the diffraction device in a region close to the center of the lens.

18. (Amended) The aperture-provided lens according to claim 9, wherein said diffraction devices are the transmission type.

19. (Amended) The aperture-provided lens according to claim 9, wherein said lens is constituted integrally with an aperture.

REMARKS

In Figure 5, the interval between advancing light beams should have been designated as Do. This may be seen at page 20, lines 3-5 in the specification. It was incorrectly designated as $D\phi$ in the figure.

Respectfully Submitted,

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AR/dlm
Enclosure
Dated: October 26, 2001

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The Assistant Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

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I hereby certify that this paper and fee are being deposited, under 37 C.F.R. § 1.10 and with sufficient postage, using the "Express Mail Post Office to Addressee" service of the United States Postal Service on the date indicated above and that the deposit is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Kathleen Libby

VERSION WITH MARKINGS TO SHOW CHANGES MADE

DRAWINGS:

Subject to approval by the Examiner in charge of the above-identified application please enter the corrections to Figures 6A as shown on the accompanying red-inked sketched.

SPECIFICATION:

Specification at page 14, line 6:

The entire disclosure of U.S. Patent Application 09/045,149, filed March 19, 1998 is expressly incorporated by reference herein.

CLAIMS:

Claims 1-8, 22-23, and 25 have been cancelled.

12. (Amended) The aperture-provided lens according to ~~any one of~~ claims ~~9 to 11~~, wherein

a second diffraction device is set in a region other than said first opening and said second opening, and

the percentage of the luminous energy penetrating without being diffracted by said second diffraction device is 5% or less.

13. (Amended) The aperture-provided lens according to ~~any one of~~ claims ~~9 to 11~~, wherein concaves and convexes are formed on the surface of a region other than said first opening and said second opening.

14. (Amended) The aperture-provided lens according to ~~any one of~~ claims ~~9 to 13~~, wherein

when assuming the diffraction device provided for said opening as a first diffraction device and the diffraction device provided for said second opening as a third diffraction device,

the grating interval of said third diffraction device is smaller than the grating interval of said first diffraction device.

15. (Amended) The aperture-provided lens according to ~~any one of~~ claims ~~9 to 13~~, wherein

said aperture-provided lens is provided with a region A and a region B; and

a light beam passing through said region A is condensed at a point different from a point where a light beam passing through said region B is consensed.

17. (Amended) The aperture-provided lens according to ~~any one of~~ claims ~~9 to 16~~, wherein

said diffraction devices having grating intervals differing in regions and the grating interval of the diffraction device in a region far from the center of a lens is larger than that of the diffraction device in a region close to the center of the lens.

18. (Amended) The aperture-provided lens according to ~~any one of~~ claims ~~9 to 17~~, wherein said diffraction devices are the transmission type.

19. (Amended) The aperture-provided lens according to ~~any one of~~ claims ~~9 to 18~~, wherein said lens is constituted integrally with an aperture.

Fig. 5